

appears also that the quality of the food available in post monsoon months may trigger the breeding activity. The availability of paddy and groundnut in the post monsoon months in the study area confirms this presumption. On the other hand, however, the breeding activity of the Indian desert mammals, inclusive of *Mus* species, is at the maximum during monsoon due to prevalence of favourable temperatures and availability of nutritive green food (Prakash 1960, 1971). Though Tirupati region falls under semi arid zone, yet the *Mus platythrix*

breeds during winter like typical tropical mammals, which is interesting.

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### 5. WHITE PATCH AND ITS GENETIC CONTROL IN SOME OF THE INDIAN RODENT SPECIES

The albinism and colour variations in the rodents of the Indian sub-continent were reported earlier in some of the taxonomic literature dealing with Indian rodents. The occurrence of a diamond shaped white patch on the ventral surface of a house rat, *Rattus rattus rufescens* has also been reported recently (Joshee 1961,

Deoras and Mithel 1974). But this fact was overlooked, because the stress was given more on the epidemic studies rather than on its genetical consideration. The fact that a white patch was seen, though very rarely, even in the field rats of the species of *B. indica* (Pradhan 1975), attracted my attention towards the

subject. Some specimens of the species *R. r. rufescens*, possessing two white patches on the ventral side were also collected.

A pregnant female rat, *R. r. rufescens*, possessing a white patch (henceforth W.P.) on the pectoral region was caught alive and kept in a cage under observation. The female gave birth to four young ones possessing white patches. Attempts to breed and continue this generation further failed due to their premature deaths. But when the karyological studies were conducted in these true typical rats, an interesting fact came to light. Though *R. r. rufescens* (W.P.) has  $2n=38$  chromosomes, its karyomorphology varies from that of ordinary *R. r. rufescens*. *R. r. rufescens* (W.P.) lacks one pair of graded metacentric chromosomes and possesses one extra pair of graded telocentric chromosomes than those present in *R. r. rufescens* (Table 1).

Now it seems from the above observations that the possibility of the genetic control over the occurrence of white patch cannot be ruled out. Davis and Baker (1971) have shown that the change in the morphology of some of the rat chromosomes controls the colour variations. Besides, the white patch of similar kind has

TABLE 1  
KARYOMORPHOLOGY OF *R. r. rufescens* WITH AND WITHOUT W.P.

| Species                       | Diploid No. | *Large Meta-centric | *Sub-Telo-centric | *Graded Telo-centric | *Graded Meta-centric |
|-------------------------------|-------------|---------------------|-------------------|----------------------|----------------------|
| <i>R. r. rufescens</i>        | 38          | 2                   | 1                 | 8                    | 8                    |
| <i>R. r. rufescens</i> (W.P.) | 38          | 2                   | 1                 | 9                    | 7                    |

\* Figures in pairs.

also been reported in other rodent species. Therefore we feel that the polymorphism of some typical nature in the karyomorphology may be playing some important role in controlling the expression of white patch in rodents.

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